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# **The performance of four possible rules for selecting the Prime Minister after the Dutch Parliamentary elections of June 2010**

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# The performance of four possible rules for selecting the Prime Minister after the Dutch Parliamentary elections of June 2010

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## Abstract

Economic policy depends not only on national elections but also on coalition bargaining strategies. In coalition government, minority parties bargain on policy and form a majority coalition, and select a Prime Minister from their midsts. In Holland the latter is done conventionally with Plurality, so that the largest party provides the chair of the cabinet. Alternative methods are Condorcet, Borda or Borda Fixed Point. Since the role of the Prime Minister is to be above all parties and represent the nation and to be there for all citizens, it would enhance democracy and likely be optimal if the potential Prime Minister is selected from all parties and at the start of the bargaining process. The performance of the four selection rules is evaluated using the results of the 2010 Dutch Parliamentary elections. The impossibility theorem by Kenneth Arrow (Nobel memorial prize in economics 1972) finds a crucially different interpretation.

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## Introduction

In Holland after Parliamentary elections, it is a convention that the party with the greatest number of votes leads the efforts to form a coalition government ("informateur"), and subsequently that this party selects the Prime Minister ("formateur"). On June 9 2010 the Dutch had Parliamentary elections, the highest score is 31 seats in a Parliament of 150, only 21% of the vote, and this does not seem like a strong base to select a Prime Minister. Of course, the choice on the Prime Minister is conditional on agreements on policy. Possibly a coalition is formed in which the largest party does not partake and then the largest party in that coalition would conventionally select the Prime Minister. However, in Colignatus (2007) "Voting Theory for Democracy" it appears that a government "mirroring" Parliament would tend to be optimal, which also means that the issue on policy making could be rather distinct from the selection of the Prime Minister. Thus there is room to consider the selection process as a separate factor apart from policy bargaining. A better separate selection process of the Prime Minister could enhance the political base. The current method of selection is an application of the Plurality voting rule. Other ways to select the Prime Minister are the Condorcet rule, the Borda count, and their combination the Borda Fixed Point method. When we better understand their performance then eventually Parliament might decide to use another method than current Plurality to select the politician to lead the efforts to form a coalition government.

The various approaches are mentioned by Saari (2001), "Decisions and elections", except for the Borda Fixed Point method. In his preface, Saari sighs: "I know that you messed up on some decisions. I sure have." There still is a case to be made for suitable election methods.

This present paper thus evaluates the performance of such selection rules. The results of the Dutch elections provide a timely testing ground. Foreign readers will hopefully not mind that we use the local letter soup. In the Borda ranking the top three are CU (5 seats), CDA (21) and VVD (31) and if you remember those then you should be okay. The CU and CDA are Christian parties and VVD are liberal-conservatives (though Americans may consider this a curious combination). The party that gets international media attention for its desire to stop immigration is PVV (24) and it may play a key role in the conventional choice of the Prime Minister but it has no significant role in the better alternatives.

Plurality is the simplest scheme, and parties vote for their own candidate. As said, here VVD wins.

In pairwise voting the CU is the Condorcet winner.

However, that pairwise voting is notoriously unstable. In many elections there is no Condorcet winner, leaving one with the question what to do next. The Borda system of preference ranking has some drawbacks too; in fact, Condorcet presented his method since he was critical of the Borda count.

The overall best approach very likely is the Borda Fixed Point, see Colignatus (2007). This was developed with a somewhat different line of reasoning but it can be seen as a compromise between Borda and Condorcet.

For 2010 the Borda Fixed Point method selects the CU. This happens to coincide with the Condorcet winner since the CU apparently is rather high on the preference lists. CU has only 5 seats in a Parliament of 150 but apparently it has a strategic position. VVD with the greatest number of votes (31) only comes in third place in the overall ranking.

This paper does not discuss the formation of the coalition. The issue may be mentioned though since it clarifies the utility of a more independent selection of the Prime Minister. There are all kinds of possible coalitions, even when not mirroring Parliament but having the target to minimize the majority. CU could form a coalition of CU, CDA, PvdA, D66 and GL with a majority of 76 of 150 seats. VVD could form a coalition of VVD, CDA and PVV with a majority of 76 as well. The major difference will be the severity of budget cuts, the investments in the environment and the approach to migration. The Christian Democrats CDA took a plunge from 41 to 21 seats but still hold a key position. If they choose for a period of opposition, which does not seem wise, they would force a coalition of VVD, PvdA, D66 and GL, likely with VVD producing the Prime Minister. Clearly the formation of a coalition is a tedious matter but it seems that the process could be simplified by using information on the preferences for the selection of the Prime Minister.

The appendix investigates whether the VVD can affect this outcome by voting strategically. Other parties might try to block that strategy.

PM 1. This calculation is based upon my own guesstimate of the rankings by parties, and the distribution of seats with 99.6% of the votes counted, see NOS (2010). The distribution of seats can still change because of votes from foreign destinations and re-calculation on remainder seats. The final result is on June 15.

PM 2. An analysis for 2006, see Colignatus (2006), also selected Rouvoet (CU) as Prime Minister instead of Balkenende (CDA) who was appointed in the conventional manner. Possibly the current CDA plunge is related to this choice.

PM 3. A comparison of the United Kingdom 2010 and The Netherlands 2006 can be found in Colignatus (2010).

---

## Data

The present outcome (99.6% of the votes counted):

```
Parties = {{CDA, 21}, {CU, 5}, {D66, 10}, {GL, 10}, {PvdA, 30}, {PvdD, 2}, {PVV, 24},
           {SGP, 2}, {SP, 15}, {VVD, 31}} // Sort
```

CDA	21
CU	5
D66	10
GL	10
PvdA	30
PvdD	2
PVV	24
SGP	2
SP	15
VVD	31

```
Items = First /@ Parties
{CDA, CU, D66, GL, PvdA, PvdD, PVV, SGP, SP, VVD}
```

```

NumberOfItems = Length[Items]

10

vlis = Last /@ Parties;
NumberOfVoters = Length[vlis]

10

```

The voting weights are fractions of 1.

```

Votes = vlis / Add[vlis]

{ 7/50, 1/30, 1/15, 1/15, 1/5, 1/75, 4/25, 1/75, 1/10, 31/150 }

% // NRoundAt[#, 2] &

{0.14, 0.03, 0.07, 0.07, 0.2, 0.01, 0.16, 0.01, 0.1, 0.21}

StatusQuo []

CDA

```

---

## Hypothesis

The statement of full preference orderings is a bit too complicated for the individual ballot box. However, the method can be used in Parliament by the Members.

The mathematical routines require party preferences on the selection of a Prime Minister. Each party can present a candidate and then the Members of Parliament enter their orders of preference on the candidates. These preferences should best expressed not by the parties but by the individual Members of Parliament.

Parties might increase their chances by proposing candidates that are well received by other parties. It is simplest to presume that their candidates will be the leaders at the elections.

(NB. An alternative is to allow parties to present more candidates, proportional to the size of the party. A big party might present both its leader and some compromise candidates. However, since such compromise candidates might diminish the value of the leader, this is a less likely approach.)

It is advisable that parties in Parliament express their preference orderings. Lacking these (I am still trying to entice them to provide these), I give my own guesstimate. It may be noted that parties will adapt their preference orderings in the bargaining process, when parties drop policy aims and compromise. This aspect cannot be reproduced here.

```

Pref[CDA] = {CDA > CU > VVD > PvdD > GL > SP > SGP > PvdA > D66 > PVV};
Pref[CU] = {CU > CDA > SGP > PvdA > GL > SP > VVD > PvdD > D66 > PVV};
Pref[D66] = {D66 > PvdA > GL > VVD > PvdD > CU > SP > CDA > SGP > PVV};
Pref[GL] = {GL > SP > PvdA > PvdD > D66 > CU > CDA > VVD > SGP > PVV};
Pref[PvdA] = {PvdA > GL > D66 > SP > PvdD > CU > CDA > VVD > SGP > PVV};
Pref[PvdD] = {PvdD > D66 > GL > CU > SP > PvdA > CDA > VVD > SGP > PVV};
Pref[PVV] = {PVV > VVD > CU > CDA > PvdD > SGP > SP > PvdA > D66 > GL};
Pref[SGP] = {SGP > CU > CDA > PvdD > VVD > PVV > SP > PvdA > GL > D66};
Pref[SP] = {SP > GL > PvdA > D66 > PvdD > CU > CDA > VVD > SGP > PVV};
Pref[VVD] = {VVD > CDA > CU > D66 > PvdD > PVV > GL > PvdA > SP > SGP};

```

These preference patterns can be translated in Borda ordinal preference scores. A high score is a high preference.

```
Preferences = PrefToList[ToPref @@ Pref[#]] & /@ Items
```

$$\begin{pmatrix} 10 & 9 & 2 & 6 & 3 & 7 & 1 & 4 & 5 & 8 \\ 9 & 10 & 2 & 6 & 7 & 3 & 1 & 8 & 5 & 4 \\ 3 & 9 & 10 & 7 & 8 & 5 & 1 & 2 & 4 & 6 \\ 4 & 9 & 5 & 10 & 7 & 6 & 1 & 2 & 8 & 3 \\ 4 & 9 & 7 & 8 & 10 & 5 & 1 & 2 & 6 & 3 \\ 4 & 9 & 8 & 7 & 5 & 10 & 1 & 2 & 6 & 3 \\ 7 & 9 & 2 & 1 & 3 & 6 & 10 & 5 & 4 & 8 \\ 8 & 9 & 1 & 2 & 3 & 7 & 5 & 10 & 4 & 6 \\ 4 & 9 & 6 & 8 & 7 & 5 & 1 & 2 & 10 & 3 \\ 9 & 1 & 8 & 5 & 4 & 7 & 6 & 2 & 3 & 10 \end{pmatrix}$$


---

## The Borda Fixed Point (BFP) selection

Given the above data and assumptions, the Borda Fixed Point algorithm determines the fixed point, i.e. the winner who also wins from the runner up (the alternative winner if the overall winner would not partake).

```
BordaFP[]
```

```
CU
```

The Borda count merely sums the scores.

```
BordaAnalysis[] // N
```

```
{Select → CU, BordaFPQ → {True},
```

```
WeightTotal → {6.50667, 7.38, 5.44, 5.88667, 5.76667, 5.94667, 3.52667, 3.06667, 5.26, 6.22},
```

```
Position → ( 2. ), Ordering →
```

$$\left. \begin{pmatrix} 3.06667 & \text{SGP} \\ 3.52667 & \text{PVV} \\ 5.26 & \text{SP} \\ 5.44 & \text{D66} \\ 5.76667 & \text{PvdA} \\ 5.88667 & \text{GL} \\ 5.94667 & \text{PvdD} \\ 6.22 & \text{VVD} \\ 6.50667 & \text{CDA} \\ 7.38 & \text{CU} \end{pmatrix} \right\}$$

CU (Rouvoet) would not only have most votes in a Borda vote but would also win in a (binary) duel from the CDA (Balkenende who resigned, his successor is Verhagen), where the CDA would win if the CU would not partake. CU also wins from VVD (Rutte) that actually has the highest number of seats.

## Relation to Arrow's impossibility theorem

Arrow (1951) showed that five axioms resulted into a contradiction. He suggested that these axioms were reasonable and morally desirable for a democracy and he concluded to an impossibility. This approach has dominated the literature since then and some economists expressed a preference for dictatorship. Here we take a different approach. It is reasonable and morally desirable that a process works. An impossibility thus is not reasonable and not morally desirable. Hence we have to drop one of the axioms. For example, a tie can be broken by a flip of a coin or the chair, but Arrow's axioms require always the same outcome and thus cannot deal with those tie breaking rules. We can make a distinction between voting and deciding. For voting outcomes it is reasonable that there are preference cycles but when we decide on a tie then we use a tie breaking rule. For decision making we drop the axiom of independence of irrelevant alternatives, that is better labelled as the axiom of pairwise decision making. We don't decide using only pairs and the limited information that they provide but we use all information provided by the whole voting field. In this approach, the Borda Fixed Point is likely to be seen by many as the best selection method. Alternative methods tend to have too many drawbacks. See Colignatus (2007) for a longer discussion. Here we can evaluate the performance of the mentioned alternatives. PM. Approval voting has some popularity in academic circles but see Colignatus (2005).

## Alternative to BFP: Pairwise voting

It appears that the CU is also the Condorcet winner - i.e. wins from all pairwise votes.

This criterion however is not a strong one since there can be elections where there is no such winner or there can be elections where that winner loses in a Borda approach.

PairwiseMajority [ ]

$$\left\{ \text{VoteMargin} \rightarrow \text{VoteMargin} \right\} \begin{pmatrix} 0 & -\frac{23}{75} & \frac{8}{75} & \frac{8}{75} & \frac{8}{75} & \frac{8}{75} & \frac{17}{25} & \frac{73}{25} & \frac{8}{75} & \frac{2}{15} \\ \frac{23}{75} & 0 & \frac{34}{75} & \frac{34}{75} & \frac{14}{75} & \frac{14}{25} & \frac{4}{15} & \frac{14}{25} & \frac{29}{75} & \frac{44}{75} \\ -\frac{8}{75} & -\frac{34}{75} & 0 & -\frac{8}{75} & -\frac{32}{75} & \frac{11}{75} & \frac{49}{75} & \frac{23}{75} & -\frac{2}{75} & -\frac{8}{75} \\ -\frac{8}{75} & -\frac{34}{75} & \frac{8}{75} & 0 & \frac{4}{75} & -\frac{1}{15} & \frac{6}{25} & \frac{44}{75} & \frac{34}{75} & -\frac{1}{25} \\ -\frac{8}{75} & -\frac{14}{75} & \frac{32}{75} & -\frac{4}{75} & 0 & -\frac{1}{15} & \frac{6}{25} & \frac{23}{75} & \frac{1}{75} & -\frac{1}{25} \\ -\frac{8}{75} & -\frac{14}{25} & -\frac{11}{75} & \frac{1}{15} & \frac{1}{15} & 0 & \frac{17}{25} & \frac{68}{75} & \frac{1}{5} & -\frac{16}{75} \\ \frac{17}{25} & \frac{4}{15} & -\frac{49}{75} & -\frac{6}{25} & -\frac{6}{25} & -\frac{17}{25} & 0 & -\frac{4}{15} & -\frac{6}{25} & -\frac{17}{25} \\ \frac{73}{25} & \frac{14}{25} & -\frac{23}{75} & -\frac{44}{75} & -\frac{23}{75} & -\frac{68}{75} & \frac{4}{15} & 0 & -\frac{44}{75} & \frac{68}{75} \\ -\frac{8}{75} & -\frac{29}{75} & \frac{2}{75} & -\frac{34}{75} & -\frac{1}{75} & -\frac{1}{5} & \frac{6}{25} & \frac{44}{75} & 0 & -\frac{13}{75} \\ -\frac{2}{15} & -\frac{44}{75} & \frac{8}{75} & \frac{1}{25} & \frac{1}{25} & \frac{16}{75} & \frac{17}{25} & \frac{68}{75} & \frac{13}{75} & 0 \end{pmatrix},$$

1 → {StatusQuo → CDA, Sum → {8, 9, 3, 5, 4, 5, 0, 1, 3, 7}, Max → 9, Condorcet winner → CU,

Pref → Pref(PVV, SGP, {D66, GL, PvdA, PvdD, SP}, VVD, CDA, CU), Find → CU,

LastCycleTest → False, Select → CU},  $N \rightarrow \left\{ \text{Sum} \rightarrow \left\{ \frac{151}{75}, \frac{94}{25}, -\frac{3}{25}, \frac{58}{75}, \frac{8}{15}, \frac{67}{75}, -\frac{296}{75}, -\frac{73}{15}, -\frac{12}{25}, \frac{36}{25} \right\} \right\}$ ,

Pref → Pref(SGP, PVV, SP, D66, PvdA, GL, PvdD, VVD, CDA, CU), Select → CU}, All → CU}

## Alternative to BFP: the current Plurality voting

Plurality selects the person with the highest vote - that might be less than 50%. All parties vote for their own candidate. Here VVD (Rutte) wins but has only 21% and much less than 50%.

**Plurality []**

$$\left\{ \text{Sum} \rightarrow \begin{pmatrix} \text{CDA} & \frac{7}{50} \\ \text{CU} & \frac{1}{30} \\ \text{D66} & \frac{1}{15} \\ \text{GL} & \frac{1}{15} \\ \text{PvdA} & \frac{1}{5} \\ \text{PvdD} & \frac{1}{75} \\ \text{PVV} & \frac{4}{25} \\ \text{SGP} & \frac{1}{75} \\ \text{SP} & \frac{1}{10} \\ \text{VVD} & \frac{31}{150} \end{pmatrix}, \text{Ordering} \rightarrow \begin{pmatrix} \frac{1}{75} & \text{PvdD} \\ \frac{1}{75} & \text{SGP} \\ \frac{1}{30} & \text{CU} \\ \frac{1}{15} & \text{D66} \\ \frac{1}{15} & \text{GL} \\ \frac{1}{10} & \text{SP} \\ \frac{7}{50} & \text{CDA} \\ \frac{4}{25} & \text{PVV} \\ \frac{1}{5} & \text{PvdA} \\ \frac{31}{150} & \text{VVD} \end{pmatrix}, \text{Max} \rightarrow \left\{ \text{VVD}, \frac{31}{150} \right\}, \text{Select} \rightarrow \{\} \right\}$$

**% // N**

$$\left\{ \text{Sum} \rightarrow \begin{pmatrix} \text{CDA} & 0.14 \\ \text{CU} & 0.0333333 \\ \text{D66} & 0.0666667 \\ \text{GL} & 0.0666667 \\ \text{PvdA} & 0.2 \\ \text{PvdD} & 0.0133333 \\ \text{PVV} & 0.16 \\ \text{SGP} & 0.0133333 \\ \text{SP} & 0.1 \\ \text{VVD} & 0.206667 \end{pmatrix}, \text{Ordering} \rightarrow \begin{pmatrix} 0.0133333 & \text{PvdD} \\ 0.0133333 & \text{SGP} \\ 0.0333333 & \text{CU} \\ 0.0666667 & \text{D66} \\ 0.0666667 & \text{GL} \\ 0.1 & \text{SP} \\ 0.14 & \text{CDA} \\ 0.16 & \text{PVV} \\ 0.2 & \text{PvdA} \\ 0.206667 & \text{VVD} \end{pmatrix}, \text{Max} \rightarrow \{ \text{VVD}, 0.206667 \}, \text{Select} \rightarrow \{\} \right\}$$

---

## An example pairwise vote: CU and CDA

The following example shows that the candidate of the CU would win from the candidate of the CDA in a pairwise vote.

This already follows from the phenomenon that CU is the Condorcet winner.

There are however 45 of such pairwise votes and thus it is simplest if all Members of Parliament would enter a single preference list (as shown above) whereafter the algorithm determines the overall result.

Being a Condorcet winner is not necessarily the best condition. The Borda Fixed Point also takes account of the rank position.

**SelectPreferences [{CDA, CU}]**

CheckVote::adj: NumberOfItems adjusted to 2

{Number of Voters → 10, Number of items → 2, Votes are nonnegative and add up to 1 → True,  
 Preferences fit the numbers of Voters and Items → True, Type of scale → Ordinal, Preferences give a proper ordering → True,  
 Preferences add up to → {3}, Items → {CDA, CU}, Votes →  $\left\{ \frac{7}{50}, \frac{1}{30}, \frac{1}{15}, \frac{1}{15}, \frac{1}{5}, \frac{1}{75}, \frac{4}{25}, \frac{1}{75}, \frac{1}{10}, \frac{31}{150} \right\}$ }

**Plurality []**

$$\left\{ \text{Sum} \rightarrow \begin{pmatrix} \text{CDA} & \frac{26}{75} \\ \text{CU} & \frac{49}{75} \end{pmatrix}, \text{Ordering} \rightarrow \begin{pmatrix} \frac{26}{75} & \text{CDA} \\ \frac{49}{75} & \text{CU} \end{pmatrix}, \text{Max} \rightarrow \left\{ \text{CU}, \frac{49}{75} \right\}, \text{Select} \rightarrow \text{CU} \right\}$$


---

## An example pairwise vote: CU and VVD

Since VVD has the greatest number of seats its leader is conventionally regarded as the candidate to become Prime Minister. He however loses from Rouvoet in a pairwise vote.

**SelectPreferences** [{VVD, CU}];

**Plurality** []

$$\left\{ \text{Sum} \rightarrow \begin{pmatrix} \text{CU} & \frac{17}{30} \\ \text{VVD} & \frac{13}{30} \end{pmatrix}, \text{Ordering} \rightarrow \begin{pmatrix} \frac{13}{30} & \text{VVD} \\ \frac{17}{30} & \text{CU} \end{pmatrix}, \text{Max} \rightarrow \left\{ \text{CU}, \frac{17}{30} \right\}, \text{Select} \rightarrow \text{CU} \right\}$$

## Conclusion

The current Dutch convention originates in political practice and hence has a firm empirical base. It is a somewhat daring thought to test, clarify and enhance the political base of a potential Prime Minister by using more sophisticated techniques. The challenge is shown by the difference between the conventional outcome of VVD with 31 seats and the Borda Fixed Point outcome of CU with 5 seats, all in a Parliament with 150 seats. The conventional approach uses only limited information (the top preference) and the sophisticated method uses whole rankings and a test on stability. The conventional approach has the advantage that it has been used over the last century but perhaps that also shows its drawbacks.

The role of the Prime Minister is to be above the parties, to be there for all citizens, to manage the decision making process, and to clarify government policy. Frequently there is a "premier bonus" at the polls caused by the phenomenon that many voters appreciate this role so that the Prime Minister in function gets more votes than would normally be the case. The position of Prime Minister tends to be a politically desirable goal. It provides a position to also implement specific political goals under the umbrella or rather guise of the common cause. The original function can be enhanced when the selection is somewhat separated from the bargaining process.

The current convention in Holland to target a coalition with minimal majority and to select the Prime Minister with Plurality in that coalition thus finds a challenge in the optimal approach of both mirroring Parliament and selecting the Prime Minister with the widest political base (as indicated by the Borda Fixed Point method).

## Appendix: Strategic voting

Strategic voting can never be fully avoided.

VVD might give its competitor CU much less weight and then it indeed succeeds in toppling CU but then CDA turns up as the winner.

**Pref**[VVD] = {VVD > CDA > D66 > PvdD > PVV > GL > PvdA > SP > SGP > CU};

**Preferences** = **PrefToList**[**ToPref** @@ **Pref**[#]] & **/@ Items**

$$\begin{pmatrix} 10 & 9 & 2 & 6 & 3 & 7 & 1 & 4 & 5 & 8 \\ 9 & 10 & 2 & 6 & 7 & 3 & 1 & 8 & 5 & 4 \\ 3 & 5 & 10 & 8 & 9 & 6 & 1 & 2 & 4 & 7 \\ 4 & 5 & 6 & 10 & 8 & 7 & 1 & 2 & 9 & 3 \\ 4 & 5 & 8 & 9 & 10 & 6 & 1 & 2 & 7 & 3 \\ 4 & 7 & 9 & 8 & 5 & 10 & 1 & 2 & 6 & 3 \\ 7 & 8 & 2 & 1 & 3 & 6 & 10 & 5 & 4 & 9 \\ 8 & 9 & 1 & 2 & 3 & 7 & 5 & 10 & 4 & 6 \\ 4 & 5 & 7 & 9 & 8 & 6 & 1 & 2 & 10 & 3 \\ 9 & 1 & 8 & 5 & 4 & 7 & 6 & 2 & 3 & 10 \end{pmatrix}$$



```
BordaFP[]
```

```
BordaFP::set: Local set found: {CDA, VVD}
```

```
BordaFP::chg: Borda gave {CDA}, the selected Fixed Point is CDA
```

```
CDA
```

```
BordaAnalysis[] // N
```

```
{Select → CDA, BordaFPQ → {True},
```

```
WeightTotal → {6.50667, 5.46, 5.82, 6.26667, 6., 6.38, 3.52667, 3.06667, 5.52667, 6.44667},
```

```
Position → ( 1. ), Ordering →
```

$$\left( \begin{array}{ll} 3.06667 & \text{SGP} \\ 3.52667 & \text{PVV} \\ 5.46 & \text{CU} \\ 5.52667 & \text{SP} \\ 5.82 & \text{D66} \\ 6. & \text{PvdA} \\ 6.26667 & \text{GL} \\ 6.38 & \text{PvdD} \\ 6.44667 & \text{VVD} \\ 6.50667 & \text{CDA} \end{array} \right)$$

However, other parties might anticipate such VVD strategic voting behaviour and they might respond by entering CU much higher in their preferences. Then the CU indeed is restored in its top position. (If course, other parties may also see strategies by other parties and hence adapt other scores, which creates a complex whole.)

```
Pref[CDA] = {CDA > CU > VVD > PvdD > GL > SP > SGP > PvdA > D66 > PVV};
Pref[CU] = {CU > CDA > SGP > PvdA > GL > SP > VVD > PvdD > D66 > PVV};
Pref[D66] = {D66 > CU > PvdA > GL > VVD > PvdD > SP > CDA > SGP > PVV};
Pref[GL] = {GL > CU > SP > PvdA > PvdD > D66 > CDA > VVD > SGP > PVV};
Pref[PvdA] = {PvdA > CU > GL > D66 > SP > PvdD > CDA > VVD > SGP > PVV};
Pref[PvdD] = {PvdD > CU > D66 > GL > SP > PvdA > CDA > VVD > SGP > PVV};
Pref[PVV] = {PVV > CU > VVD > CDA > PvdD > SGP > SP > PvdA > D66 > GL};
Pref[SGP] = {SGP > CU > CDA > PvdD > VVD > PVV > SP > PvdA > GL > D66};
Pref[SP] = {SP > CU > GL > PvdA > D66 > PvdD > CDA > VVD > SGP > PVV};
Pref[TON] = {TON > CU > PVV > VVD > CDA > PvdD > SGP > SP > PvdA > D66 > GL};
Pref[VVD] = {VVD > CDA > D66 > PvdD > PVV > GL > PvdA > SP > SGP > CU};
```

```
Preferences = PrefToList[ToPref @@ Pref[#]] & /@ Items
```

```
( 10 9 2 6 3 7 1 4 5 8 )
( 9 10 2 6 7 3 1 8 5 4 )
( 3 9 10 7 8 5 1 2 4 6 )
( 4 9 5 10 7 6 1 2 8 3 )
( 4 9 7 8 10 5 1 2 6 3 )
( 4 9 8 7 5 10 1 2 6 3 )
( 7 9 2 1 3 6 10 5 4 8 )
( 8 9 1 2 3 7 5 10 4 6 )
( 4 9 6 8 7 5 1 2 10 3 )
( 9 1 8 5 4 7 6 2 3 10 )
```

```
BordaFP[]
```

```
CU
```

**BordaAnalysis** [ ] // N

{Select → CU, BordaFPQ → {True},

WeightTotal → {6.50667, 7.38, 5.44, 5.88667, 5.76667, 5.94667, 3.52667, 3.06667, 5.26, 6.22},

Position → ( 2. ), Ordering →

3.06667	SGP
3.52667	PVV
5.26	SP
5.44	D66
5.76667	PvdA
5.88667	GL
5.94667	PvdD
6.22	VVD
6.50667	CDA
7.38	CU

A way to reduce strategic voting is to publish the votes, so that parties may have some explaining to do. A secret ballot would hold for the individual voter in the ballot box but not necessarily for voting by Members of Parliament on the Prime Minister. Such open statements of preference do not exclude strategic voting but they do somewhat reduce it. The element of strategy would be reduced even more when preference orderings are announced before the national elections so that there is less room for tinkering after the elections.

Overall, the political discussion and the selection of the Prime Minister of the coalition cabinet would seem more sophisticated when using orderings and the Borda Fixed Point method than merely taking the leader of the largest party. It would also be advisable to have the government mirror the distribution in Parliament, since one would need a good argument to exclude a party with say 5% of the votes from partaking in government. Party programs may also become a bit more realistic when parties have experience in government (though this is not necessarily shown in practice).

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## Literature

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